

CLAIMS

1. An apparatus for detecting a position of a wheel tilting angle adjustment member, comprising: a table on which a wheel mounted on a vehicle is seated through the wheel
5 tilting angle adjustment member for adjusting a tilting angle of the wheel, the table being freely floated in an arbitrary horizontal direction; table position detection means for detecting a position in a horizontal direction of the table; and adjusting member position calculating means for
10 calculating the position of the wheel tilting angle adjustment member coupled to the wheel seated on the table on the basis of the detected position in the horizontal direction of the table.

2. An apparatus for detecting a position of a wheel
15 tilting angle adjustment member according to claim 1, comprising storage means in which relative position information on the wheel tilting angle adjustment member with respect to the wheel is stored, the relative position information being previously set for each vehicle type,
20 wherein the adjusting member position calculating means calculates the position in the horizontal direction of the wheel seated on the table from the position in the horizontal direction of the table which is detected by a table position detection sensor, and the adjusting member position
25 calculating means calculates the position of the wheel tilting

angle adjustment member on the basis of the calculated position in the horizontal direction of the wheel and the relative position information stored in the storage means.

3. An apparatus for detecting a position of a wheel
5 tilting angle adjustment member according to claim 1, comprising storage means in which relative position information on the wheel tilting angle adjustment member with respect to the wheel in a state in which the wheel is seated on the table is stored, the relative position information
10 being previously set for each vehicle type, wherein the adjusting member position calculating means calculates the position of the wheel tilting angle adjustment member on the basis of the position in the horizontal direction of the table which is detected by the table position detection means and
15 the relative position information stored in the storage means.

4. An apparatus for detecting a position of a wheel
tilting angle adjustment member according to claim 2 or 3, wherein the pieces of relative position information are stored in the storage means corresponding to a plurality of vehicle
20 types respectively, and the adjusting member position calculating means calculates the position of the wheel tilting angle adjustment member on the basis of the relative position information in accordance with the vehicle type on the table.

5. An apparatus for detecting a position of a wheel
25 tilting angle adjustment member according to any one of claims

1 to 4, wherein the wheel tilting angle adjustment member is a tie rod.

6. A method for detecting a position of a wheel tilting angle adjustment member, wherein a position of a wheel mounted on a vehicle is detected through the wheel tilting angle adjustment member which adjusts a tilting angle of the wheel, and the position of the wheel tilting angle adjustment member is calculated on the basis of the detected wheel position and relative position information on the wheel tilting angle adjustment member with respect to the wheel, the relative position information being previously set for each vehicle type.

7. An axle-shaped work adjustment apparatus, comprising: an open-end wrench which has an insertion groove into which an axle-shaped work is inserted in a radial direction at a front end portion, a part of or the whole of the insertion groove being formed by an engagement groove engaged with a tool engagement portion of the axle-shaped work which is formed in a rotating member journaled in the front end portion while freely rotated, the open-end wrench normally and reversely rotating the axle-shaped work by normally and reversely rotating the rotating member while the tool engagement portion is engaged with the engagement groove; detection means for detecting whether or not the objects are present near both ends of a bottom surface of the insertion

groove respectively; a drive mechanism which can drive the open-end wrench so that an angle of a rotating axial line of the rotating unit of the open-end wrench is changed with respect to an axial line of the axle-shaped work while the axle-shaped work is inserted in the insertion groove; and drive mechanism controlling means for controlling the drive mechanism to cause the rotating axial line of the rotating unit to coincide with the axial line of the axle-shaped work so that the detection means detects the presence of the axle-shaped work near both the ends of the bottom surface of the insertion groove when the axle-shaped work is inserted into the insertion groove.

8. An axle-shaped work adjustment apparatus according to claim 7, wherein the drive mechanism is configured to be capable of rotating the open-end wrench about the axial line in a longitudinal direction of the open-end wrench and be capable of tilting the open-end wrench in a predetermined direction.

9. An axle-shaped work adjustment apparatus according to claim 7 or 8, wherein the axle-shaped work is a tie rod built in a steering mechanism of an automobile.

10. An axle-shaped work setting method in which the axle-shaped work is set in an open-end wrench which has an insertion groove into which the axle-shaped work is inserted in a radial direction at a front end portion, a part of or the

whole of the insertion groove being formed by an engagement groove engaged with a tool engagement portion of the axle-shaped work which is formed in a rotating member journaled in the front end portion while freely rotated, the open-end wrench normally and reversely rotating the axle-shaped work by normally and reversely rotating the rotating member while the tool engagement portion is engaged with the engagement groove, the method comprising: detecting whether or not the tool engagement portion is present near an end portion of a bottom surface of the engagement groove in both the ends of the bottom surface; and driving the open-end wrench on the basis of the detection result to cause the rotating axial line of the rotating unit to coincide with the axial line of the axle-shaped work.